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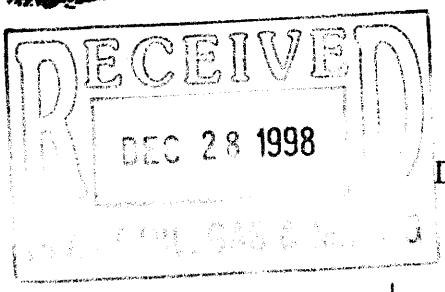
CO-OP MINING COMPANY

P.O. Box 1245
Huntington, Utah 84528

Office (435) 687-2450
FAX (435) 687-2084



December 22, 1998

Coal Program
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801

ACT/015/025 #2
Pam, Ken, Sharon

To Whom It May Concern,

Re: Birch Spring Action Plan, Tech Directive 005, Bear Canyon Mine, ACT/015/025, Emery County, Utah

This letter is to summarize the progress of the work which has been accomplished on Steps 3 and 4 of the Action Plan which was approved by the Division per letter dated August 7, 1998.

Step 3 consisted of conducting additional on-the-ground investigations of faults, fractures, and joints in the area of Birch Spring. On October 15, 1998, afield survey was conducted involving myself and Jim Smith, Division representative.

The survey included identifying the faults and fractures associated with and adjacent to Birch Spring. The survey began at Birch Spring. Birch Spring No. 1 and 2 sources flow from the South joint of a double fracture. A significant fracture was also identified 20 feet West of the Birch Spring fracture. A fault was observed East of Birch Spring having at least three points of offset totaling approximately 15 feet. These three geologic structures were then tracked simultaneously to the North.

During the survey, additional faults and fractures were identified East of these three structures. Two additional fractures and one additional small fault was observed East of Birch Spring and West of the Blind Canyon Fault. The total distance across this area was approximately 600 feet, with each structure being separated by what appeared to be competent blocks of formation with no significant fracturing, some as wide as 50'.

The two fractures and the fault surrounding Birch Spring were mapped Northward to the Ridge between the Birch Spring drainage and Blind Canyon (approximately 1,000 ft). The lack of outcrop prevented following the fractures beyond this point.

In mapping these fractures northward, the mapping simultaneously progressed up through the tongues of the Starpoint Sandstone. The following observations were made:

1. The joints and faults were consistently aligned North-South ± 5°. One joint of the double fracture was observed in the Spring Canyon tongue striking N 20° W. The fractures appeared to be present in all three tongues of the Starpoint Sandstone, indicating good continuity vertically, but with few exceptions were not prominently observable within the shale layers as they were within the sandstone formations.

2. The spacing between the faults and fractures showed limited variation, but appeared to be steadily converging Northward and/or upward. Due to the terrain in the area, no determination could be made on what component of the convergence might be horizontal or vertical. The fractures did not completely converge within the mapped area, and none of the fractures converged with the Blind Canyon fault, but seemed to parallel the fault.

3. All of the joints and faults were nearly vertical and planar, and interconnectivity was not well developed or apparent.

The attached map delineates the fractures which were mapped in relation to the Blind Canyon fault and the Spring. From the mapping, it appeared that the joints and fractures have good continuity and may conduct water horizontally in a North/South direction and vertically. Vertical conductivity, however, could potentially be limited by the shale layers, which appear to heal the fractures within the shale formations. None of the fractures converge with the Blind Canyon fault in the vicinity of Birch Spring, and no apparent flow paths were observed to facilitate East/West movement of water from the Blind Canyon Fault to Birch Spring. The fracture system could allow local recharge from precipitation and snowmelt into Birch Spring, which may be enhanced by surficial fractures and/or restricted by shale layers.

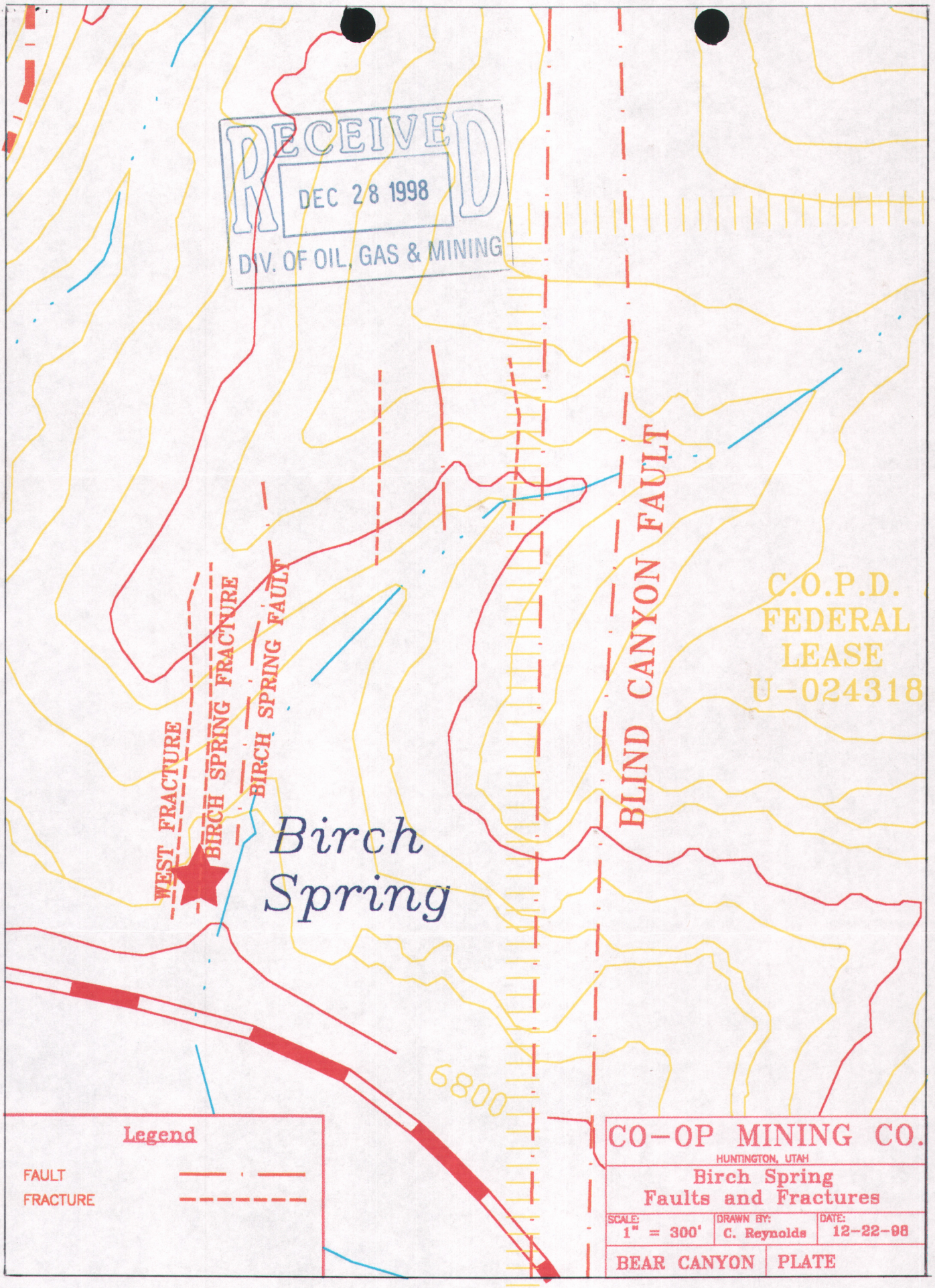
Item 4 of the Action Plan involved conducting a complete isotopic and chemical investigation of the Bear Canyon Mine permit and surrounding areas. This is to inform the Division that all data has been collected by Mayo and Associates. The information will be compiled into a revised "Probable Hydrologic Consequences" document which will be submitted to the Division upon completion for inclusion in the Bear Canyon Mine PAP.

If you have any questions, please call me at (435) 687-2450.

Thank You,

Charles Reynolds, PE
Mining Engineer/Environmental Coordinator

Attachment(s)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DEC 28 1998
DIV. OF OIL, GAS & MINING
BLIND CANYON FAULT
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LEASE
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WEST FRACTURE
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Birch
Spring
6800
Legend
FAULT
FRACTURE
CO-OP MINING CO.
HUNTINGTON, UTAH
Birch Spring
Faults and Fractures
SCALE: 1" = 300'
DRAWN BY: C. Reynolds
DATE: 12-22-98
BEAR CANYON
PLATE